

Mimosa pigra   简体中文  正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

Common name *trinh nu nhon* (English, North Vietnam), *xao ho* (English, South Vietnam), *putri malu* (Indonesian Bahasa), *mai yarap ton* (Thai), *chi yop* (Thai), *semalu gajah* (Malay), *mimose* (German), *giant trembling plant* (English), *catclaw* (English, Puerto Rico), *mimosa* (English), *giant sensitive plant* (English), *giant sensitive tree* (English), *bashful plant* (English), *catclaw mimosa* (English), *columbi-dalagoa* (Portuguese), *juquiri* (Portuguese), *juquiri grand* (Portuguese), *malicia-de-boi* (Portuguese), *eomridera* (Spanish), *espino* (Spanish), *sensitiva* (Spanish), *una de gato* (Spanish), *mai yah raap yak* (Thai), *kembang gajah* (Malay)

Synonym *Mimosa pellita*

Similar species

Summary *Mimosa pigra* is invasive, especially in parts of South East Asia and Australia. It reproduces via buoyant seed pods that can be spread long distances in flood waters. *Mimosa pigra* has the potential to spread through natural grassland floodplain ecosystems and pastures, converting them into unproductive scrubland which are only able to sustain lower levels of biodiversity. In Thailand *Mimosa pigra* blocks irrigation systems that supply rice fields, reducing crop yield and harming farming livelihoods. In Vietnam it has invaded unique ecosystems in protected areas, threatening the biodiversity of seasonally inundated grasslands.



[view this species on IUCN Red List](#)

Species Description

When mature, *Mimosa pigra* is an erect, much branched prickly shrub reaching a height of 3m to 6m. Stems are greenish at first but become woody, are up to 3m long, and have randomly scattered, slightly recurved prickles 0.5cm to 1cm long. Leaves are bright green, 20cm to 25cm long and bipinnate, consisting of about 15 pairs of opposite primary segments 5cm long with sessile, narrowly lanceolate leaflets that fold together when touched or injured and at night. The flowers are pink or mauve, small, regular and grouped into globular heads 1cm to 2cm in diameter. The heads are borne on stalks 2cm to 3cm long, with two in each leaf axil, while the corolla has four lobes with eight pink stamens. The fruit is a thick hairy, 20-25 seeded, flattened pod borne in groups in the leaf axils, each 6.5cm to 7.5cm long and 0.7cm to 1cm wide. The fruit turns brown when mature, breaking into one-seeded segments. The seeds are brown or olive green, oblong, flattened, 4mm to 6mm long, and 2mm wide (Walden *et al.* 1999).

Lifecycle Stages

Plants mature quickly and can set seed in their first year of growth (Walden *et al.* 1999). Flowering may begin 6 to 8 months following germination. Flowers are bee-pollinated and possibly wind-pollinated. Plants are thought to be self-compatible. Flowers develop in about 7 to 9 days, and seed pods in about 25 days. *M. pigra* fruits and flowers all year round in the Mekong Delta, but its main fruiting season occurs during the dry season (December to May) (Triet *et al.* Undated).

Seeds are extremely hardy and can remain dormant for more than 15 years depending on the environment. For example, half of a seed population was no longer viable after 99 weeks at a depth of 10cm in a light clay soil, while a similar loss in viability was observed after only 9 weeks in heavier cracking clay (Lonsdale *et al.* 1988, in Walden *et al.* 1999). In sandy soils the lifespan of seeds may be much longer. Dormancy of seeds in the soil is broken by expansion and contraction of the hard seed-coat by temperature changes ranging from about 25–70°C. Seeds buried deeper than 10cm generally do not successfully germinate unless brought to the surface (Walden *et al.* 1999).

Habitat Description

Mimosa favours a wet-dry tropical climate and grows in open, moist sites such as floodplains, coastal plains and river banks. For example, in the Mekong Delta, Vietnam, where it is a serious weed annual rainfall levels may reach up to 2200mm. It may not be a major problem in regions with an annual rainfall of less than 75mm or greater than 2250mm. In both Australia and Vietnam it prefers to invade seasonally inundated grassland (Walden *et al.* 1999; Triet *et al.* Undated).

It is more likely to colonise and eventually cause problems in disturbed areas. This is due to the ability of *Mimosa* seeds to establish rapidly on bare soils, which lack competitive pressures imposed by other seedlings (Lonsdale and Braithwaite 1988, in Walden *et al.* 1999). It is common along the edges of reservoirs, canals, river banks and roadside ditches, and in agricultural lands and overgrazed floodplains (Walden *et al.* 1999). In Vietnam it is typically found along the edge of both natural and manmade water bodies and along roadsides (Triet *et al.* Undated). In Australia it is known to spread very rapidly within overgrazed rangelands, and within Costa Rica (part of its native range) it is common in overgrazed areas (Walden *et al.* 1999; Boucher *et al.* 1983, in Walden *et al.* 1999).

Mimosa does not appear to grow preferentially in any soil type, but is found most commonly in soils ranging from black cracking clays to sandy clays to coarse siliceous river sand. Seed production and plant life expectancy are greater on black cracking clays than on the lighter clays and silty loams (Lonsdale 1992).

Reproduction

Seeds are produced in individual segments of seed-pods that 'burst' apart when mature (Walden *et al.* 1999). Under optimal conditions annual seed production may reach up to 220,000 per plant.

A study carried out within the Mekong Delta found that the average number of seeds in the topsoil was 100 seeds per metre squared (Triet *et al.* Undated). In contrast, an average of 12,000 seeds per metre squared was reported for a *mimosa*-infested area in northern Australia (Lonsdale 1992, in Triet *et al.* Undated).

General Impacts

River floodplains and swamp forests in northern Australia are threatened by dense thickets of *Mimosa pigra*. The weed supports fewer numbers of birds and lizards, less herbaceous plants and fewer tree seedlings. It prevents traditional food gathering by Aborigines on otherwise resource rich wetlands.

M. pigra has the potential to harm a wide number and variety of different types of primary production. If large infestations occur over farmland, mimosa may threaten the health of pastoral industries by reducing the area of grazing land and the carrying capacity of the land. Furthermore, if livestock are reliant on natural water sources for drinking, their access to water may be blocked. As a result, meat production and income may be reduced (Praneetvatakul 2001).

M. pigra may reduce water flow and increase silt levels, as it commonly colonises water course edges. This may threaten the sustainability of reservoirs and canals and any livelihoods reliant on them. For example, the weed negatively impacts rice cultivation in Thailand by blocking irrigation inlets (as well as encouraging increases in the numbers of rats and crabs, which damage crops) (Praneetvatakul 2001).

M. pigra may interfere with the cultivation of other economically-important plants. For example, *M. pigra* is able to compete with the young palm trees in immature oil palm plantations. This may cause a decrease in the production of palm oil (Praneetvatakul 2001).

Common along roadsides, mimosa may also increase the costs of maintaining power poles and cables used for electricity transmission. It may also decrease driver visibility, increasing the potential for traffic accidents (Praneetvatakul 2001).

Management Info

Preventative measures: Preventative weed control is the most cost efficient form of weed management. Comprehensive surveys should ensure isolated infestations are identified and targeted before they expand to uncontrollable levels. Educating the community is also an important tool. Restricting the movement of vehicles, stock, stock feed, soil and sand from infested areas is important to prevent the spread of mimosa seeds (Walden *et al.* 1999).

A [Risk Assessment of *Mimosa pigra*](#) for Hawai'i and other Pacific islands was prepared by Dr. Curtis Daehler (UH Botany) with funding from the Kaulunani Urban Forestry Program and US Forest Service. The alien plant screening system is derived from Pheloung *et al.* (1999) with minor modifications for use in Pacific islands (Daehler *et al.* 2004). The result is a score of 25 and a recommendation of: "Likely to cause significant ecological or economic harm in Hawai'i and on other Pacific Islands as determined by a high WRA score, which is based on published sources describing species biology and behaviour in Hawai'i and/or other parts of the world."

A [Risk assessment of *Mimosa pigra*](#) for Australia was prepared by Pacific Island Ecosystems at Risk (PIER) using the Australian risk assessment system (Pheloung, 1995). The result is a score of 23 and a recommendation of: reject the plant for import (Australia) or species likely to be a pest (Pacific).

Click here for [Information about biological, physical and chemical control of *Mimosa pigra*](#).

Pathway

Mimosa was probably introduced to the Northern Territory (Australia) via the Darwin Botanic Gardens. This may have been due to accidental contamination of seed samples. Alternatively it may have been introduced intentionally due to its unusual sensitive leaves (Miller and Lonsdale 1987, in Walden *et al.* 1999). Mimosa has been introduced and planted to reduce erosion (Walden *et al.* 1999). Mimosa has been introduced to new regions as an ornamental (Walden *et al.* 1999). The seeds may adhere to vehicles or other machinery (Lonsdale *et al.* 1985, in Walden *et al.* 1999).

Principal source: [Pacific Islands Ecosystems at Risk, \(PIER, 2002\)](#)

Compiler: Colin Wilson, Parks & Wildlife Commission of the Northern Territory & IUCN/SSC Invasive Species Specialist Group (ISSG)
Palmerston, Australia.

Annie Lane, Northern Department of Primary Industry and Fisheries, Resource Management Division, Australia.



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Mimosa pigra*

Review: Colin Wilson, Parks and Wildlife Commission of the Northern Territory, Australia.
Annie Lane, Northern Department of Primary Industry and Fisheries, Australia.

Publication date: 2006-07-19

ALIEN RANGE

[3] AUSTRALIA	[1] CAMBODIA
[1] DOMINICAN REPUBLIC	[1] GHANA
[1] GUINEA	[2] INDONESIA
[1] KENYA	[1] MALAYSIA
[1] PAPUA NEW GUINEA	[1] SAINT LUCIA
[1] SOUTH AFRICA	[1] SOUTH EAST ASIA
[1] SRI LANKA	[1] SWAZILAND
[1] TANZANIA, UNITED REPUBLIC OF	[1] THAILAND
[1] UGANDA	[1] UNITED STATES
[4] VIET NAM	

Red List assessed species 2: CR = 1; LC = 1;

[Mesophoyx intermedia](#) **LC**

[Ornithoptera alexandrae](#) **CR**

BIBLIOGRAPHY

41 references found for *Mimosa pigra*

Management information

[Asia Pacific Wetland Managers Training Program \(APWMTP, 2001\). Strategic Weed Management in Vietnamese Wetlands: Weed Control and Occupational Health and Safety Issues Vietnam, 14 - 18 May 2001. Available from <http://www.cdu.edu.au/ctwm/courses/course10/course10.html> \[Accessed 10 November, 2004\]](#)

[Australian Department of the Environment and Heritage, 2003. Mimosa \(*Mimosa pigra*\). Weeds of National Significance: Weed Management Guide Department of the Environment and Heritage and the CRC for Australian Weed Management, 2003.](#)

Summary: Available from: <http://www.weeds.gov.au/publications/guidelines/wons/m-pigra.html> [Accessed 23 October 2008]

Buckley, Y.M., Rees, M., Paynter, Q., Lonsdale, M. 2004. Modelling integrated weed management of an invasive shrub in tropical Australia, *Journal of Applied Ecology* 41(3).

Csurhes, S. and Edwards, R., 1998. Potential environmental weeds in Australia: candidate species for preventative control. Queensland Department of Natural Resources.

Daehler, C.C; Denslow, J.S; Ansari, S and Huang-Chi, K., 2004. A Risk-Assessment System for Screening Out Invasive Pest Plants from Hawaii and Other Pacific Islands. *Conservation Biology* Volume 18 Issue 2 Page 360.

Summary: A study on the use of a screening system to assess proposed plant introductions to Hawaii or other Pacific Islands and to identify high-risk species used in horticulture and forestry which would greatly reduce future pest-plant problems and allow entry of most nonpests.

Dickman, C. R. 1996. Overview of the impacts of feral cats on Australian native fauna. Canberra: Australian Nature Conservation Agency.

[Forno, I.W., Fichera, J. and Prior, S. 1999. Assessing the Risk to *Neptunia oleracea* Lour. by the Moth, *Neurostrota gunniella* \(Busck\), a Biological Control Agent for *Mimosa pigra* L. In N.R. Spencer \(ed.\). 2000. *Montana State University, Bozeman, Montana, USA Proceedings of the X International Symposium on Biological Control of Weeds: 449 - 457.*](#)

Summary: Available from: <http://www.invasive.org/publications/xsymposium/proceed/06pg449.pdf> [Accessed 17 March 2005]

Holding, D. Undated. *Mimosa Factsheet* Co-operative Research Centre for Australian Weed Management.

Kriwoken, L. K. and Hedge, P. 2000. Exotic species and estuaries: managing *Spartina anglica* in Tasmania, Australia. *Ocean and Coastal Management* 43: 573-584.

Lonsdale, W. M., Miller, I. L. and Forno, I. W. 1995. *Mimosa pigra* L.. The Biology of Australian Weeds, Volume 1. Groves, R. H., Shepherd, R. C. H. and Richardson, R. G. (eds.). R. G. & F. J. Richardson, Melbourne: 169-188.

Summary: A complete review of the species giving details of name, description of the plant, history, distribution, habitat, growth and development, reproduction, population dynamics, importance, legislation, and weed management.

[Mack, R. N and W. M. Lonsdale., 2002. Eradicating invasive plants: Hard-won lessons for islands. In *Turning the tide: the eradication of invasive species: 311-318.* Veitch, C.R. and Clout, M.N.\(eds\). IUCN SSC Invasive Species Specialist Group. IUCN. Gland, Switzerland and Cambridge, UK.](#)

Summary: Uses *Clidemia hirta* in Hawaii as an eradication case study. *Clidemia* is in the Melastomataceae and somewhat similar ecologically to *miconia*.

Eradication case study in *Turning the tide: the eradication of invasive species.*

[Marko, M. Controlling invasion of the exotic shrub \(*Mimosa pigra*\) in tropical Australian wetlands.](#)

[Meyer, J.-Y. and Smith, C. W. 1997. Actes de la Première Conférence Régionale sur la Lutte contre Miconia \(26-29 août 1997\), Proceedings of the First Regional Conference on Miconia Control \(26-29 August 1997\). HEAR website.](#)

Summary: Proceedings (in French and English).

[Pacific Invasives Initiative \(PII\), 2006. *Management of the Invasive Tree Mimosa Pigra in Madang, Papua New Guinea.*](#)

Summary: Available from: <http://www.issg.org/cii/PII/Mimosa.htm> [Accessed 27 March 2006]

Parke, J., Henzell, R. and Pickles, G. 1996. Managing Vertebrate Pests: Feral Goats. Australian Government Publishing Service: 129pp.

Summary: A comprehensive review of the history and biology of feral goats in Australia, the damage they cause, and community attitudes to feral goat management. A wide range of strategies for goat control are discussed and recommended.

Paynter, Q. 2003. Integrated weed management: effect of herbicide choice and timing of application on the survival of a biological control agent of the tropical wetland weed, *Mimosa pigra*, *Biological Control* 26(2): 162-167.

Paynter, Q. and Flanagan, G.J. 2004. Integrating herbicide and mechanical control treatments with fire and biological control to manage an invasive wetland shrub, *Mimosa pigra*, *Journal of Applied Ecology* 41(4).

Paynter, Q., Hennecke, B. 2001. Competition Between Two Biological Control Agents, *Neurospora gunniella* and *Phloeospora mimosae-pigrae*, and Their Impact on the Invasive Tropical Shrub *Mimosa pigra*, *Biocontrol Science and Technology* 11(5): 575-582.

[PIER \(Pacific Island Ecosystems at Risk\), 2002. *Mimosa pigra*](#)

Summary: Ecology, synonyms, common names, distributions (Pacific as well as global), management and impact information.

Available from: http://www.hear.org/pier/species/mimosa_pigra.htm [Accessed 5 February 2003].

Praneetvatakul, S. 2001. An Impact Assessment of ACIAR Research Projects on Biological Control in Thailand. Kasetsart University (Department of Agricultural and Resource Economics): Bangkok. In: S. Isvilanonda, S. Praneetvatakul, C. Sangkapituk, A. Sattarasart, C. Singhaprecha and P. Sirisupluxana. 2001. *Impact Assessments of Forty-nine Thailand/Australia Collaborative Projects Funded by ACIAR during 1983-1995* (Working Paper Series No. 38).

Rash, J. E., Williamson, R. C. and Taylor, S. J. 1995. How green is your mudflat? Proceedings of the Australasian conference on Spartina control. Department of Conservation and Natural Resources, Yarram, Victoria, Australia.

Summary: Collection of papers about the history of Spartina invasions in Australia and New Zealand and subsequent control attempts.

Sanderson, J. C. 1990. A preliminary survey of the distribution of the introduced macroalga, *Undaria pinnatifida* (Harvey) suringar on the coast of Tasmania, Australia. *Botanica Marina* 33: 153-157.

Schatz, T.J. 2001. The effect of cutting on the survival *Mimosa pigra* and its application to the use of blade ploughing as a control method, *Plant Protection Quarterly* 16(2)

Swaziland s Alien Plants Database., Undated. *Mimosa pigra*

Summary: A database of Swaziland s alien plant species.

[Tran Triet, Le Cong Kiet, Nguyen Thi Lan Thi and Pham Quoc Dan \(undated\). *The invasion by Mimosa pigra of wetlands of the Mekong Delta, Vietnam.*](#)

Summary: Abstract: The Mekong River Delta is a wetland complex, covering an area of approximately five million hectares, of which about four million hectares are in Vietnam, the rest in Cambodia. Recent inventory showed that environmental weeds made up about 10% of the natural flora of the Mekong Delta. Of those alien plants, mimosa, *Mimosa pigra* L., is among the most serious. This paper provides a synopsis of mimosa invasion on wetlands of the Mekong Delta, and discusses its distribution, habitat preference, morphology, phenology, seed bank, proliferation and current efforts to control mimosa in two wetland national parks, Tram Chim (Dong Thap Province) and U Minh Thuong (Kien Giang Province). The first record of mimosa in the Mekong Delta was collected in 1979 in Moc Hoa District, Long An Province. The weed is now found in all 12 provinces of the Mekong Delta, mostly in the freshwater region influenced by floodwater from the Mekong River. A map of mimosa infestation areas in the Mekong Delta is provided, together with discussions on habitat preference and measurements of plant biological characteristics. The invasion by mimosa has been monitored in the two national parks since 1999. At U Minh Thuong, the invasion of mimosa was detected early, and the eradication was completed with little cost, using manual removal methods. At Tram Chim, however, the infestation has increased beyond easy management. Since 2000, the infestation area in Tram Chim has doubled every year. Maps of mimosa in Tram Chim 2000-2002 are presented. Experiences with mimosa in Tram Chim and U Minh Thuong demonstrate that awareness and early intervention are key factors of a successful weed-management program, particularly in the context of developing countries where there is often a lack of funding and expertise for comprehensive weed control practices.

Available from http://www.ento.csiro.au/weeds/pdf/mimosa_symposium/07Trietal.pdf [Accessed 10 November, 2004]

Twyford, K. L., Humphrey, P. G., Nunn, R. P. and Willoughby, L. 2000. Eradication of feral cats (*Felis catus*) from Gabo Island, southeast Victoria. *Ecological Management* 1: 42-49.

[van Dam, R.A., Camilleri, C., Turley, C.J. and Markich, S.J. 1999. *Ecological risk assessment of the herbicide Tebuthiuron in northern Australian wetlands.* In: *Proceedings of the EnviroTox 99 International Conference: 137-142.*](#)

Summary: Available from: <http://www.environment.gov.au/ssd/publications/ssr/pubs/ssr166-risk.pdf> [Accessed 23 March 2005]

[Walden, D., Finlayson, C.M., van Dam, R. and Storrs, M. 1999. *Information for a risk assessment and management of Mimosa pigra in Tram Chim National Park, Viet Nam.* In: *Proceedings of the EnviroTox 99 International Conference: 160-170.*](#)

Summary: Available from: <http://www.deh.gov.au/ssd/publications/ssr/pubs/ssr166-risk.pdf> [Accessed 23 March 2005]

Williams 1995. Managing Vertebrate Pests: Rabbits. CSIRO. Australian Government Publishing Service, Canberra.

Summary: A management handbook for rabbits in Australia.

General information

[Binggeli, P. 1997. *Mimosa pigra* L. \(Mimosaceae\).](#)

Crane, J.H., Balerdi, C.F. and Klassen, W. 2002. Section 4: Common Weeds Found in Tropical Fruit Orchards in South Florida. In: R.L. Degner, T.J. Stevens and K.L. Morgan (Eds.) *Major Production Problems Affecting Miami-Dade Agriculture and Emerging Technological Developments.*

Foxcroft, L.C. and Richardson, D.M. 2003. Managing alien plant invasions in the Kruger National Park. Pp. 385-403 in: Child, L.E., Brock, J.H., Brundu, G., Prach, K., Pysek, P., Wade, P.M. and Williamson, M. 2003. *Plant invasions: Ecological threats and management solutions.*

Backhuys Publishers, Leiden, The Netherlands.

Summary: The paper outlines the problem of alien plant invasions in the Kruger National Park, South Africa.

[Garnett, S.T. and Crowley, G.M. 2000. *Taxon Summary: Magpie Goose.* In: *The Action Plan for Australian Birds, 2000. Environment Australia.*](#)

Summary: Available from: <http://www.deh.gov.au/biodiversity/threatened/action/birds2000/cont.html> [Accessed 18 March 2005]



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Mimosa pigra*

[ITIS \(Integrated Taxonomic Information System\), 2005. Online Database *Mimosa pigra*](#)

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from:

http://www.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Mimosa+pigra&p_format=&p_ifx=plgt&p_lang=
[Accessed March 2005]

[Langeland, K.A. and Burks, K. C \(Eds\) 1998. Identification and Biology of Non-Native Plants in Florida's Natural Areas. University of Florida. *Mimosa pigra*](#)

Summary: Information on plants that pose threats to natural resource areas in Florida.

Available from: http://www.fleppc.org/ID_book/mimosa%20pigra.pdf [Accessed 30 December 2004]

Mumba, M. 2005. *Musonda Mumba*.

Parks and Wildlife Commission. Undated a *Threatened Species of the Northern Territory: Yellow Chat (Alligator Rivers Subspecies)*

Epthianura crocea tunneyi. Parks and Wildlife Commission: Northern Territory.

Parks and Wildlife Commission. Undated b *Threatened Species of the Northern Territory: Bare-rumped Sheathtail bat Saccoilamus saccoilamus*. Parks and Wildlife Commission: Northern Territory.

Parks and Wildlife Commission. Undated c. *Threatened Species of the Northern Territory: Arnhem Sheathtail bat Taphozous kapalgensis*.

Parks and Wildlife Commission: Northern Territory.

Tan Vy, N. Hoang Hao, N., Thi Ngoc Thin, N. and Duy Thuc, P. 2003. Water-related Birds Survey in Cat Tien National Park, Vietnam 2003. Cat Tien National Park Conservation Project.

Tram Chim. Undated. In: *Directory of Important Bird Areas in Vietnam*. BirdLife International in Indochina and the Institute of Ecology and Biological Resources.